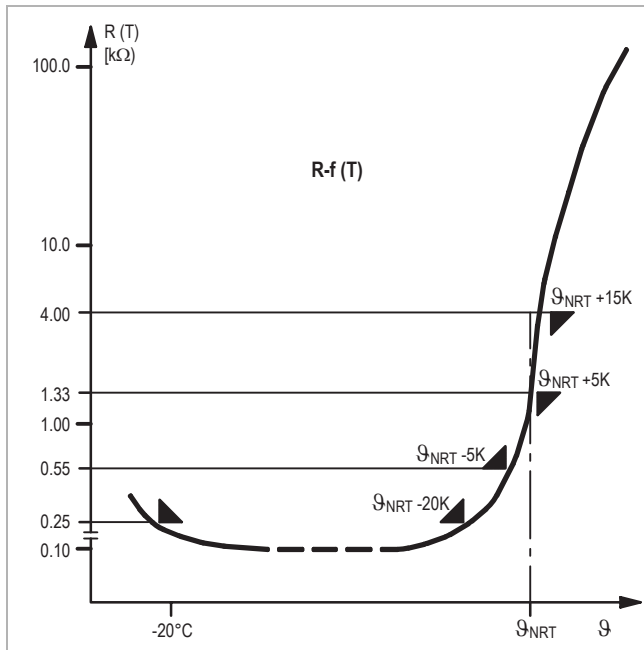
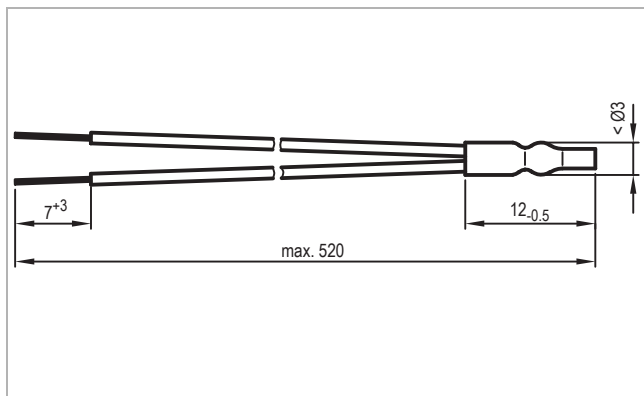


PTC Sensor

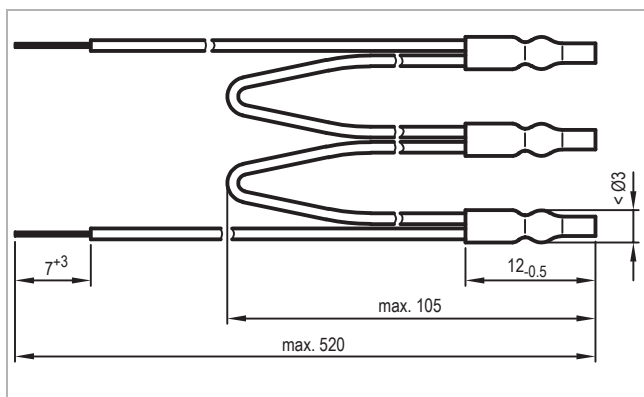
PTC Sensor



Characteristics curve of a single PTC acc. to DIN 44081



PTC miniature sensor, single



PTC miniature sensor, triplet

Application

PTC sensors are used for monitoring the temperatures on machines and systems. The shape's design makes it possible to achieve short thermal response times and facilitates the installation.

General information on PTC sensors

PTC sensors according to DIN 44081 (triplet version DIN 44082) are used to protect electrical machines against thermal overload. KRIWAN PTC sensors feature a particularly steep R/T characteristics curve. The available types range from 60°C to 160°C. PTC sensors with various nominal response temperatures can also be switched in series. This makes it possible to optimally exploit machine and coil parts with different limit temperatures and to protect them at low cost.

Technical specifications

PTC according to DIN 44081/44082

	Single	Triplet
Max. operation voltage	30V	30V
Nominal response temperature	See order data	
Tolerance of ϑ_{NRT}	$\pm 5K$	$\pm 5K$
Reproducibility of ϑ_{NRT}	$\pm 0.5K$	$\pm 0.5K$
Initial resistance R_{25}	$\leq 100\Omega$	$\leq 300\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} -5K$	$\leq 550\Omega$	$\leq 1650\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} +5K$	$\geq 1330\Omega$	$\geq 3990\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} +15K$	$\geq 4k\Omega$	$\geq 12k\Omega$
Therm. response time t_a	$\leq 5s$	$\leq 5s$
Insulation test voltage U_{is}	AC 2.5kV	AC 2.5kV
Lead insulation	FEP (upon request ETFE)	
Max. operating temperature	180°C	180°C
Top bearing temperature	60°C	60°C
Bottom bearing temperature	-25°C	-25°C
Approval	UL, all up to including 150°C, UL file no. E241244	

PTC identification and item number

The colour of the connection wire indicates the nominal response temperature. According to DIN 44081/44082, the following colour code has been specified (currently, PTC sensors are available with 160°C as standard).

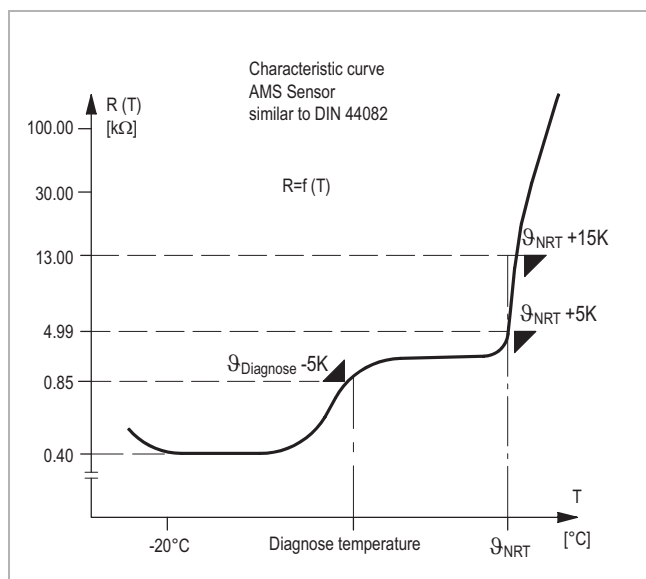
Nominal response temperature ϑ_{NRT} in °C	Colour code external/external Connection wires ye/ye	Miniature sensor single DIN 44081 Part number	Miniature sensor triplet DIN 44082 Part number
60	WH/GY	01 D 116	01 D 456
70	WH/BN	01 D 117	01 D 457
80	WH/WH	01 D 118	01 D 458
90	GN/GN	01 D 119	01 D 459
100	RD/RD	01 D 200	01 D 460
110	BN/BN	01 D 210	01 D 461
120	GY/GY	01 D 220	01 D 462
130	BU/BU	01 D 230	01 D 463
140	WH/BU	01 D 240	01 D 468
145	WH/BK	01 D 245	01 D 464
150	BK/BK	01 D 250	01 D 469
155	BU/BK	01 D 255	01 D 465
160	BU/RD	01 D 260	01 D 470

Other lengths upon request

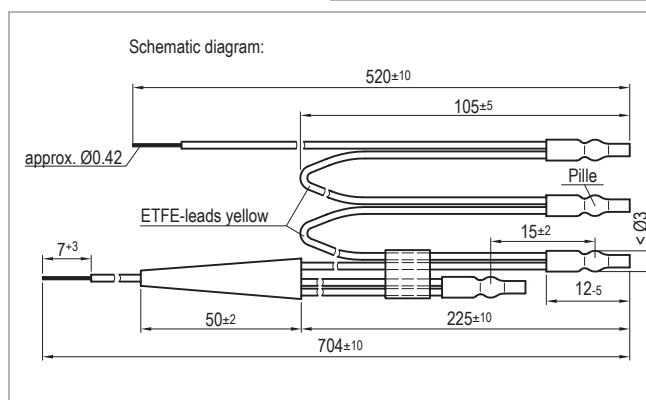
Technical changes reserved

AMS Sensor

AMS Sensor



Characteristics curve AMS



Dimensions in mm

Application

AMS sensors are used for monitoring the temperatures in electrical machines and systems. The shape's design makes it possible to achieve short thermal response times and facilitates the installation.

General information on AMS sensors

AMS sensors in combination with a KRIWAN diagnosis device make it possible to detect a dangerous temperature increase in the electrical machine much earlier than conventional PTC sensors according to DIN 44081/44082. Strong temperature increases occur for example when the rotor is blocked and lead to excess temperatures in the application. These can be lowered significantly by using AMS sensors with KRIWAN diagnosis devices. The AMS sensor conforms to the DIN 44082 specification (according to characteristics curve) in regards to the temperature specifications for NRT, NRT +5K and NRT +15K. The characteristics curve before the NRT has been modified intentionally in order to make noticeably early diagnoses possible with connected KRIWAN diagnosis devices, which is not possible with PTC sensors acc. to DIN 44082.

Technical specifications

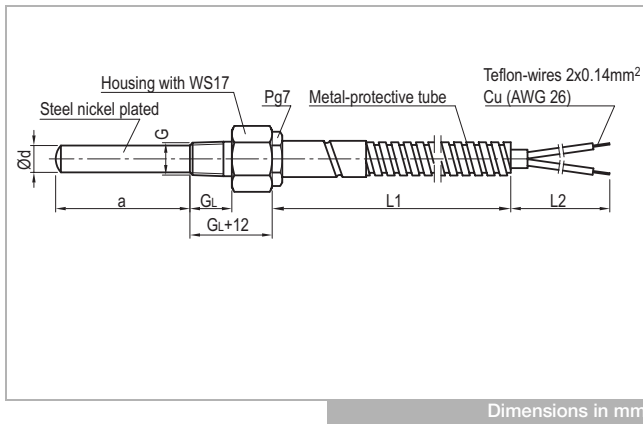
Max. operation voltage	DC 30V
Nominal response temperature	NRT
Tolerance of ϑ_{NRT}	±5K
Reproducibility of ϑ_{NRT}	±0.5K
Initial resistance R_{25}	≤400Ω
Resistance at a thermistor temperature of $\vartheta_{\text{Diagnose}} -5\text{K}$	≤850Ω
Resistance at a thermistor temperature of $\vartheta_{\text{NRT}} +5\text{K}$	≥4.99kΩ
Resistance at a thermistor temperature of $\vartheta_{\text{NRT}} +15\text{K}$	≥13kΩ
Therm. response time t_a	≤5s
Insulation test voltage U_{is}	AC 2.5kV
Lead insulation	ETFE
Max. operating temperature	150°C
Top bearing temperature	150°C
Bottom bearing temperature	-25°C
Weight	5g

Order data

Nominal response temperature NRT in °C	Colour code of the connection wires	Part number
100	RD/RD	01 D 460 S71
110	BN/BN	01 D 461 S70

PTC screw in thermal sensor

PTC screw in thermal sensor



Application

PTC sensors are used for monitoring the temperatures on machines and systems. The shape's design makes it possible to achieve short thermal response times and facilitates the installation.

Technical specifications

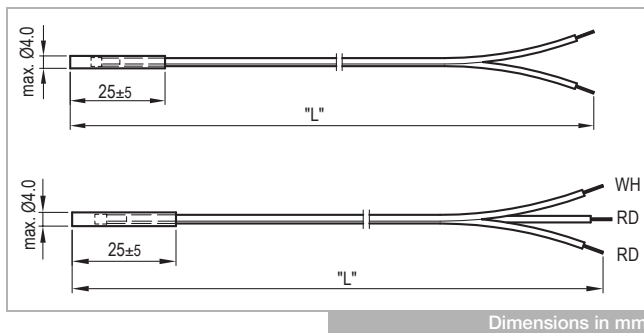
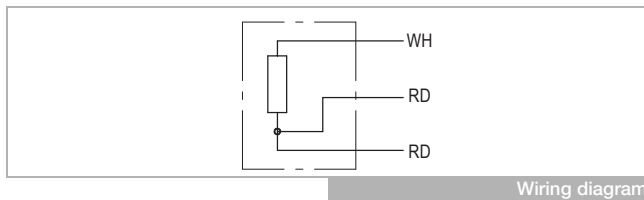
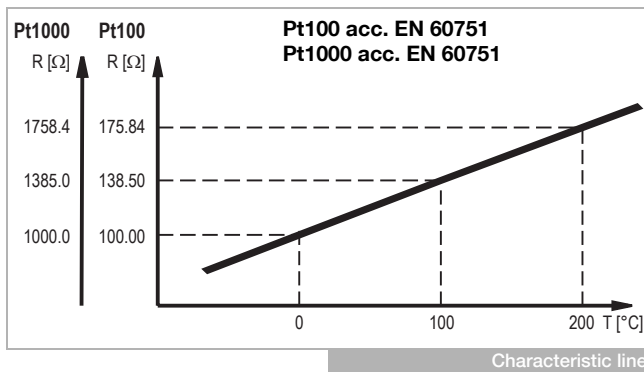
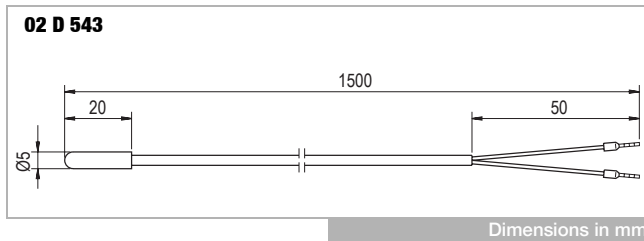
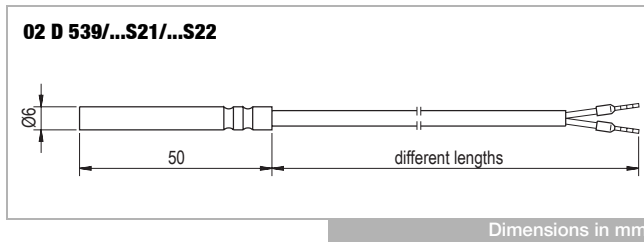
Max. operation voltage	30V
Nominal response temperature	See order data
Characteristic line	Acc. to DIN 44081
Tolerance of ϑ_{NRT}	$\pm 5K$
Reproducibility of ϑ_{NRT}	$\pm 0.5K$
Initial resistance R_{25}	$\leq 100\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} - 5K$	$\leq 550\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} + 5K$	$\geq 1330\Omega$
Resistance at a thermistor temperature of $\vartheta_{NRT} + 15K$	$\geq 4k\Omega$
Insulation test voltage U_{is}	AC 1.5kV
Top bearing temperature	60°C
Bottom bearing temperature	-25°C
Protection class acc. to EN 60529	IP65
Max. output pressure	46bar
Cable material	See features
Permitted refrigerants	not corrosive, not inflammable
Mechanical tolerance	Acc. to ISO 2768-m
Max. operating temperature	180°C
ATEX	Upon request

Thread	d in mm	a in mm	L1 in mm	L2 in mm	NRT in °C	Features	Part number		
NPTF 1/8" $G_L = 12.5mm$	4	25	690	200	120	2x Flat plug sleeves	02 D 512 S31		
			900	150	140	1x Ferrules, 1x Insulated flat plug sleeves	02 D 512 S30		
			1200	150	120		02 D 512 S45		
	8	16	25	700	500	155	twisted and tinned, flexible tubing with Teflon wires	02 D 508 S45	
				60		02 D 508 S36			
		420	90	02 D 508 S49					
		520	100	02 D 508 S33					
		700	155	02 D 508 S46					
		700	145	02 D 508 S21					
		900	120	02 D 508 S42					
		50	25	700		155		02 D 508 S23	
				1200		80		02 D 508 S40	
				52		1500		50	110
		G 1/8" $G_L = 14mm$	8	52		1500		50	100
2x Ferrules, Cable gland PG7	02 D 512 S35								
M5 $G_L = 7mm$			500	10	60	twisted and tinned	02 D 295 S21		
					70		02 D 295 S22		
					80		02 D 295 S23		
					110		02 D 295 S26		
					155		02 D 295 S32		

Technical changes reserved

PT100, PT1000 Temperature sensors

PT100, PT1000



Application

The Pt100, Pt1000 temperature sensors are used for measuring temperatures in technical applications. High-quality PT100, Pt1000 temperature sensors minimise measuring errors and usually do not require calibration. Specifications depend on type and material. The especially small dimensions ensure a quick thermal response.

Technical specifications Pt1000 acc. to EN 60751 KI.B (sensor in built-in status)

Recommended measuring current for self-heating <0.1K	DC 0.1-0.3mA
Sensor resistance at 0°C	1000Ω ±1.20Ω
Change of resistance 0-100°C	3.85Ω/K
Insulation test voltage U _{is}	AC 1.5kV

Technical specifications 02 D 539/...S21/...S22

Measuring range	-50...+100°C
Permitted ambient temperature	-50...+100°C
Protection class acc. to EN 60529	IP65
Connection line	Silicon, 2x 0.25mm ² (AWG 24)
Sensor protection	Sleeve V4A 1.4571, roller burnished 2 times

Order data

PT1000; 6m cable	02 D 539
PT1000; 10m cable	02 D 539 S21
PT1000; 3m cable	02 D 539 S22

Technical specifications 02 D 543

Measuring range	-50...+105°C
Permitted ambient temperature	-50...+105°C
Protection class acc. to EN 60529	IP65
Connection line	TPE rubber, 2x 0.32mm ² (AWG22)
Sensor protection	TPE rubber, vulcanised

Order data

PT1000	02 D 543
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Special models upon request

Technical specifications Pt100 acc. to EN 60751 KI.B (sensor in built-in status)

Recommended measuring current for self-heating <0.1K	DC 1-3mA
Sensor resistance at 0°C	100Ω ±0.1Ω
Change of resistance 0-100°C	0.385Ω/K
Insulation test voltage U _{is}	AC 2.5kV
Protection class acc. to EN 60529	IP65
Application temperature	-50...+200°C
Supply	PTFE wire 0.14mm ² (AWG26)
Bend radius	>25mm

Order data

PT100; L=1.5m ±20mm, 2-wire, wire ends tinned	02 D 582
PT100; L=500mm ±10mm, 2-wire, wire ends tinned	02 D 582 S21
PT100; L=1.5m ±20mm, 3-wire, wire ends tinned	02 D 583
PT100; L=2m ±20mm, 3-wire, wire ends tinned	02 D 583 S23

Technical changes reserved